

Translating Research into Practice

Margaret Grey, DrPH, FAAN
Dean and Annie Goodrich Professor
Yale School of Nursing



Objectives

- Describe pros & cons of different ways of generating evidence
- Use research evidence on the prevention & care of people with diabetes to illustrate translation
- Describe practice-based research networks as an approach to translational research & evaluating research evidence for practice



How do nurses know?

- Experience
- Trial and Error
- Precedent and tradition
- Authority
- Intuition
- Research



Experience & Trial and Error

- Limited for the development of generalizations
- Events experienced by two individuals differently
- May be haphazard & unsystematic
- May be unrecorded & inaccessible to later problem-solvers



Precedent or Tradition

- Inherited knowledge that is so much a part of us that we rarely demand its verification
- Efficient source of knowledge and facilitates communication
- Never been evaluated & may interfere with our ability to challenge customs





Authority

- The use of specialized sources of information
- Not infallible
- Knowledge unchallenged



Intuition

- Benner, “unconscious practice”
- Not intuition, but practice based on experience
- Rarely subject to external validation



Benner, P. (1984). *From novice to expert*. Menlo Park, CA: Addison-Wesley.

Science & Nursing: A New Idea?

“How we may hope to perpetuate or develop these creative concepts that will ensure constructive action is therefore of profound concern. The answer – only through adherence to the tenets of that exacting master – science...”



Goodrich, A. W. (1932). *The social and ethical significance of nursing*. New York: Macmillan.

The Mount Purgatory of Research



Kramer MS. Medical research: a prescriptive view. *Pediatrics*. 95(1):82-4, 1995 Jan.

Evidence-Based Practice

- “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients”
- The integration of the clinician’s expertise with family values, patient preferences, and available evidence



Sackett, DL, Rosenberg, W, Gray, JA, Haynes, RB, & Richardson, WS. (1996). Evidence-based medicine: What it is & what it isn't. *British Medical Journal*, 312, 71-72.

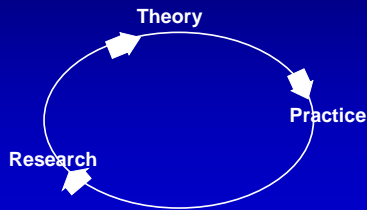
Levels of Evidence

- Levels of knowledge
 - I=meta-analyses of multiple RCTs
 - II=experimental studies
 - III=well designed, quasi-experimental studies
 - IV=non-experimental studies
 - V=case reports & clinical examples



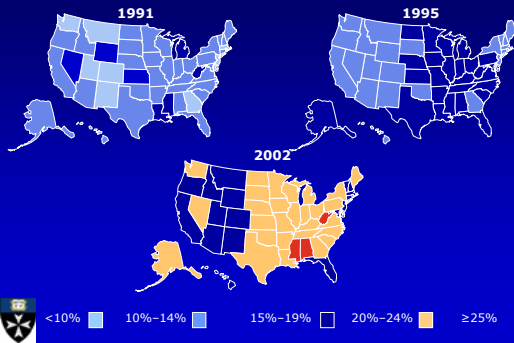
AHRQ, 2002

Interface between Theory & Practice

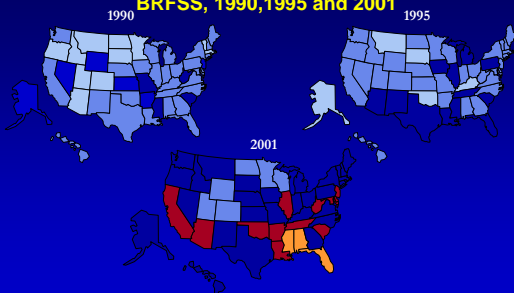


Obesity Trends* Among U.S. Adults BRFSS, 1991-2002

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" woman)



Diabetes Trends* Among Adults in the U.S., (Includes Gestational Diabetes) BRFSS, 1990, 1995 and 2001

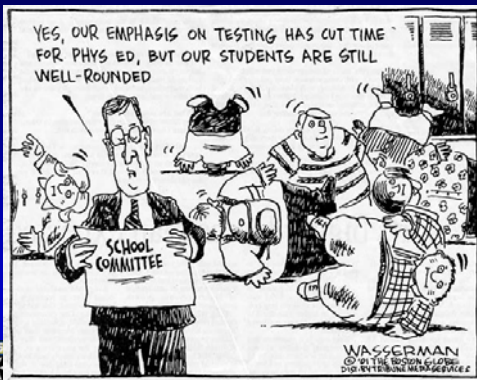


Mokdad et al., *Diabetes Care* 2000;23:1278-83; *J Am Med Assoc* 2001;286:10.

What we know

- Chronic conditions associated with lifestyle increasing
- Usual approaches do not work
- Health care delivery system designed for acute care
 - Not for prevention
 - Not for management of chronic conditions





So How Can We Use Research to Change Practice?



Primary & Secondary Prevention

- Areas that still require significant research input
 - Biomarkers
 - PSA
 - Proteomics
 - Behavioral influences on health
 - Mechanisms of behavioral treatments on health and health behaviors
 - Theoretical underpinnings largely unstudied



Loeschner & Merkle (2005). *J Nurs Scholarship*, 37, 111-119; Noar & Zimmerman (2005). *Health Educ Research*, 20, 275-290; Susman (2002). *Fam Med*, 34, 47-47; Whitlock, et al. (2002). *J Prev Med*, 22, 267-284

Next Steps: Behavioral Approaches

- Only a piece of the puzzle
 - As the sole focus, can lead to:
 - Victim blame
 - Increased patient burden
- Multi-sector approach
- Need for broad, interdisciplinary approaches
- Translation to clinical practice



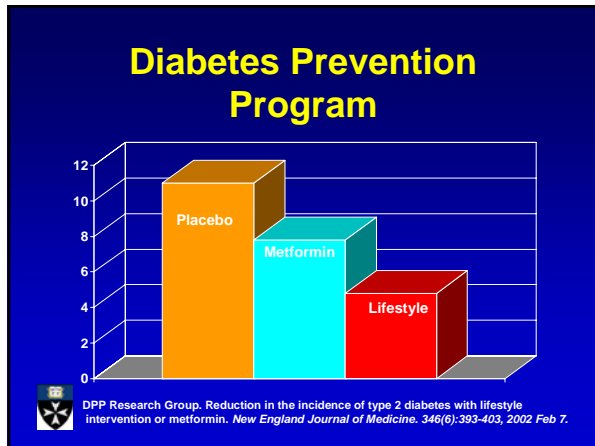
Caballero, et al. (2003). *Am J Clin Nutr*, 78, 1030-38; Jack (2005). *J Pub Health Manag Pract*, 11, 357-360; Koplan & Dietz (1999). *JAMA*, 282, 1579-1581; Yach et al. (2003). *Public Health Policy*, 24, 274-290.

Need for Translational Research

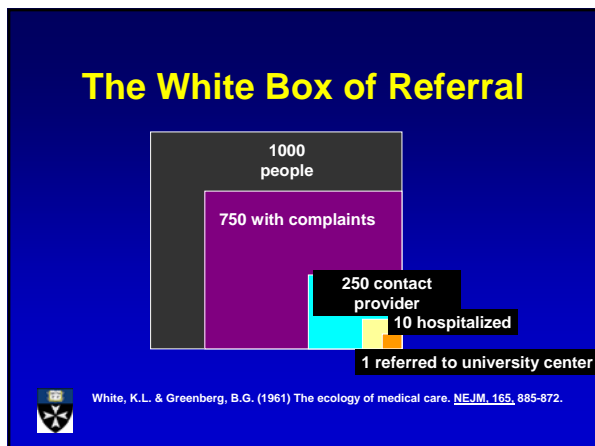
- Combines individual, family, and social approaches
- Needs to be conducted with the same rigor as efficacy trials
- Need for larger, multi-site and multi-disciplinary studies



Shojania & Grimshaw (2005). *Health Aff*, 24, 138-150.



- ## Roles in the DPP
- **Goals**
 - 7% weight loss/weight maintenance
 - 150 min of physical activity similar in intensity to brisk walking.
 - **Methods**
 - Lifestyle coaching
 - Frequent contact
 - Behavioral self-management strategies
 - Maintenance intervention, combining group & individual approaches
 - tailoring of materials & strategies to address ethnic diversity
- DPP Research Group. The Diabetes Prevention Program (DPP): description of lifestyle intervention. *Diabetes Care*. 25(12):2165-71, 2002 Dec.



Primary Care vs. Referred Care

Differences in Patients, Questions & Outcomes

	Primary Care	Referred Care
Number of patients	Very large	Much smaller
Pt Characteristics	Variable severity Variable attitudes	More severe invasive therapy OK
Questions	Variable risk of complications Is surgery acceptable Risk vs benefits	Prescreened for OK surgical risk Which invasive approach Tolerant current state
Outcomes	Watchful waiting preferred	Invasive approach preferred



Practice Based Research Network

“a group of practices devoted principally to the care of patients but also affiliated with each other...for the purpose of investigating the phenomena of clinical practice occurring in communities”



Green, 1988

Characteristics

- Organizational framework which transcends any one study
- Ongoing commitment to understanding practice
- Provide a laboratory for studying patients and families
- Uses relatively unselected populations



Essential Components

- Accepted statement of common purpose and mission
- Mechanism of governance assuring fair decision-making
- Set of unifying symbols
- Multiple communication systems
- Staff with one person identified with the network
- Set of key processes



Processes

- Identify questions important to the network
- Refine ideas and researchable questions
- Facilitate design of studies to answer question
- Provide a link between questions and funding
- Conduct and monitor studies
- Report results with appropriate credit to all



Advantages

- Opportunity to study problems difficult to study otherwise
- Efficiency of structure
- Synergism linking community and organization



CT Scanning to Evaluate Patients with a new Headache

- Based on recommendations, 46% of patients need CT scan
- In PBRN Study, only 2% of CT scan
- Savings: \$2.1 Billion



Becker, Iverson, Reed, et al., 1988

Antibiotics for Otitis Media

- 165 pediatricians, 147 sets of diagnostic criteria
- 18 sets of criteria from the literature
- Internationally, 31% to 98% prescribe antibiotics
- If decrease to 5 day course, savings = \$50 million



Culpepper, Grob, et al., 1990

Consider the possibilities...



Possibilities

- Primary care networks
- Hospital networks
- Linked care system networks



Studying nursing problems
Translating research
Evaluating outcomes



ap~~r~~net



APRNet Mission Statement

The mission of APRNet (Advanced Practice Registered Nurses' Research Network) is to operate a practiced based research network of APRN clinicians working in diverse primary care settings throughout New England. APRNet's purpose is to conduct and facilitate practice based research relevant to APRN primary care practice, develop culturally competent, evidence-based practice models for APRNs, and enhance the translation of research findings into primary care practice.



Translating Research into Practice: An Example

- Moving DPP into mainstream primary care
- APRNet members help design protocol for DPP intervention
- APRNet members' patients evaluated for impact of diabetes risk factors
 - BMI, OGTT, lipids, QoL



Whittemore, R. G. (2005). A lifestyle change program to prevent type 2 diabetes. Unpublished grant application, 1R34DK070594-01A1

Networks across Acute Care Settings

- Examine efficacy of risk identification during hospitalization
- Monitoring new care protocols
 - Self-administered insulin
 - IV insulin administration
- Translation of self-management innovations into practice



How?

- Work together - don't reinvent the wheel
- Develop a question that many can get excited about
- Enhance nursing care wherever it is delivered



“Knowing is not enough; we must apply. Willing is not enough; we must do.”

Johann Wolfgang van Goethe



The Mount Purgatory of Research



Kramer MS. Medical research: a prescriptive view. *Pediatrics*. 95(1):82-4, 1995 Jan.
